

REMARKS

Applicants acknowledge receipt of the non-final Office Action dated April 10, 2003. In that Action, the Examiner: 1) objected claims 12 and 13 for a lack of antecedent basis; 2) rejected claims 1, 8-9, 11, 15-16, 18, and 23 under 35 U.S.C. § 103(a) as being unpatentable over *Hoyle et al.* (U.S. Patent No. 5,036,945) in view of *Blake* (U.S. Patent 3,770,232); 4) rejected claims 4, 10, 20-21, and 24 under 35 U.S.C. § 103(a) as being unpatentable over *Hoyle et al.* and *Blake* in view of *Shah et al.* (U.S. Patent No. 6,137,747); 5) rejected claims 5-6, 14, and 22 under 35 U.S.C. § 103(a) as being unpatentable over *Hoyle et al.* and *Blake* in view of *Beresford et al.* (U.S. Patent No. 6,145,615); 6) rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over *Hoyle et al.* and *Blake* in view of *Wignall et al.* (U.S. Patent No. 4,872,526); 7) objected to claims 2-3, 12-13, 17, and 19 as being dependent on a rejected base claim; and 8) allowed claims 25-26.

Claim Informalities

The Examiner objected to claims 12 and 13 for lacking antecedent basis. Claim 12 has been amended to correct the informalities and now includes proper antecedent basis.

Rejections under 35 U.S.C. § 103(a)

The Examiner rejected claims 1, 8-9, 11, 15-16, 18, and 23 under 35 U.S.C. § 103(a) as being unpatentable over *Hoyle et al.* in view of *Blake*, claims 4, 10, 20-21, and 24 as being unpatentable over *Hoyle et al.* and *Blake* in view of *Shah et al.*, claims 5-6, 14, and 22 as being unpatentable over *Hoyle et al.* and *Blake* in view of *Beresford et al.*, and claim 7 as being unpatentable over *Hoyle et al.* and *Blake* in view of *Wignall et al.* The Examiner has essentially based the rejections on the same combination of art presented in the previous office action with the addition of *Blake* to provide a series of springs.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references, when combined, must teach or suggest all the claim limitations. The teaching or

suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper. The ultimate determination of patentability is based on the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence.

With respect to the current rejections, all of which are based on *Blake*, the Applicants traverse all of the pending rejections because *Blake* can not be considered analogous art. In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992). The Applicant's field of endeavor deals with isolating acoustic signals in a tool disposed within a wellbore. The invention of *Blake* deals with the isolation of shock and vibration loads for a gas turbine mounted in a ship. Because of the inherent differences in the nature, magnitude, and frequency of the vibration sought to be isolated, as well as the incompatible differences in dimensional envelope constraints and operating environment, the invention of *Blake* would not be within the field of endeavor of, or reasonably pertinent to, the problem being addressed by the current invention. Therefore, because *Blake* is nonanalogous to the current invention, the rejections based on *Blake* should be withdrawn.

Even if *Blake* is considered analogous art, *Blake* does not teach one or more springs connected in series where each spring is within a housing that limits the axial deflection of the spring. In *Blake* a series of Belleville springs are stacked on either side of a flange and a shell casing 66, 68, covers the several springs on either side. There is no discussion in *Blake* of limiting the deflection of the springs with a housing. Thus, the Examiner's reliance on *Blake* to teach one or more springs connected in series, where each spring is disposed within a housing that limits the

deflection of the spring under an axial load, is improper, and the rejections based on *Blake* should be withdrawn.

Each of the Examiner's rejections was also based on *Hoyle et al.*, which discloses a sonic well tool having a first and second attenuation and delay apparatus for attenuating and delaying the signal traversing the tool body. The first attenuation and delay apparatus is positioned above the receiver array and includes interleaved rubber and metal like washers and a bellows section having a corrugated shape and a thin traverse dimension. The second attenuation and delay apparatus is positioned below the receiver array and includes mass loading rings surrounding the housing of the well tool as well as a bellows section having a corrugated shape and a thin traverse dimension.

The tool of *Hoyle et al.* is generally configured with a sonic isolation joint 10b, including the first attenuation and delay apparatus, positioned between a transmitter 10a and a receiver 10c that includes the second attenuation and delay apparatus. The Examiner has relied heavily on features shown in Figures 4A1 and 4A2 showing springs R1-R4 disposed within a housing D as anticipating the claimed acoustic attenuation section. The structures shown in Figures 4A1 and 4A2 is not the acoustic attenuation section of *Hoyle* but are alternative embodiments of a monopole transmitter. See Col.6, Line 49 to Col. 7, Line 42. Springs R1-R4 serve to isolate pizeoceramic cylinder D from direct contact with upper bulkhead B. Col. 6, Line 65 to Col. 7, Line 2 and Col. 7, Lines 27-32.

Thus, although *Hoyle et al.* teaches an attenuation section between a transmitter and receiver it does not teach an attenuation section having one or more springs connected in series and disposed within housings that limit the deflection of the springs. As discussed above *Blake* teaches springs but does not teach one or more springs connected in series where each spring is within a housing that limits the axial deflection of the spring. Thus, the combination of *Blake* and *Hoyle et al.* does not render obvious the scope of claims 1, 8-9, 11, 15-16, 18, and 23.

With respect to claims 4, 10, 13, 20-21, and 24, which were rejected as being unpatentable over the combination of *Hoyle et al.* and *Blake* in view of *Shah et al.*, the Applicants respectfully traverse the rejections. Claims 4, 10, and 13 are dependent from claim 1 and claims 20-21 and 24 are dependent from claim 16. As discussed above, the combination of *Hoyle et al.* and *Blake* does not teach or disclose the features found in independent claims 1 and 16. The Examiner concludes

that the combination of *Hoyle et al.* and *Blake* does not teach components that are coated with a resilient or attenuating material and relies on *Shah et al.* to teach the limitation.

Shah et al. discloses an acoustic transmitter having certain components coated with Teflon® to preserve relative movement between the components. Teflon is a polymer of tetrafluoroethylene (PTFE) in which the PTFE chain is completely surrounded by fluorine atoms creating a substance that is extremely slippery and inert to almost every known chemical. Teflon® is not resilient and does not significantly attenuate acoustic signals. *Shah et al.* does not teach coating components with any material other than Teflon® and therefore does not teach coating components with a resilient or attenuating material as claimed.

The failure of *Shah et al.* to teach a resilient coating is further evidenced by the fact that the purpose of the resilient or attenuating material claimed is not to provide ease of relative motion between components but to provide acoustic insulation and additional acoustic damping. Therefore, because the combination of *Hoyle et al.* and *Blake* and *Shah et al.* does not teach all of the limitations found in claims 4, 10, 20-21, and 24, the Examiner has failed to make out a *prima facie* case of obviousness and the Applicants respectfully request a withdrawal of the rejections.

With respect to claims 5-6, 14, and 22, which were rejected over the combination of *Hoyle et al.* and *Blake* in view of *Beresford et al.*, the Applicants respectfully traverse the rejections. Claims 5, 6, and 14 are dependent from claim 1 and claim 22 is dependent from claim 16. As discussed above, the combination of *Hoyle et al.* and *Blake* does not teach or disclose the features found in independent claims 1 and 16. The Examiner concludes that the combination of *Hoyle et al.* and *Blake* does not teach the particular spring stiffness or axial loading limits as claimed and relies on *Beresford et al.* to teach those limitations.

Beresford et al. teaches a system to isolate mechanical vibrations from a drill bit from a drill string. The system of *Beresford et al.* utilizes masses supported springs to damp the vibrations created by the rotating drill bit. *Beresford et al.* does not teach selecting a spring stiffness to support a given axial load nor does it specifically disclose selection of a spring stiffness within the ranges claimed. This is most likely because the vibrations damped in *Beresford et al.* are at significantly different frequencies than the acoustic signals attenuated in the claimed invention. Therefore, because the combination of *Hoyle et al.* and *Blake* and *Beresford et al.* does not teach

all of the limitations found in claims 5-6, 14, and 22, the Examiner has failed to make out a *prima facie* case of obviousness and the Applicants respectfully request a withdrawal of the rejections.

With respect to claim 7, which were rejected over the combination of *Hoyle et al.* and *Blake* in view of *Wignall et al.*, the Applicants respectfully traverse the rejection. Claim 7 is dependent from claim 1 and, as discussed above, the combination of *Hoyle et al.* and *Blake* does not teach or disclose the features found in independent claim 1. The Examiner concludes that the combination of *Hoyle et al.* and *Blake* does not teach springs having radial holes through the coils and relies on *Wignall et al.* to teach that limitation.

Wignall et al. teaches a sonic isolation joint. The embodiment cited by the Examiner as teaching radial holes through spring coils is depicted in Figure 9, items 10b1-3 specifically. *Wignall et al.* describes sections 10b1-3 as being slotted cylindrical sections. Col. 6, line 55 to Col. 7, line 23. It is unclear how the Examiner interprets these slotted cylindrical sections as teaching a spring with radial holes through the coils. Although sections 10b1-3 are referred to as “spring” sections they do not appear to have coils like traditional springs and are merely slotted cylinders. Therefore, because the combination of the combination of *Hoyle et al.* and *Blake* and *Wignall et al.* does not teach all of the limitations found in claim 7, the Examiner has failed to make out a *prima facie* case of obviousness and the Applicants respectfully request a withdrawal of the rejection.

Objected claims

The Examiner objected to claims 2-3, 12-13, 17, and 19 as being dependent on a rejected base claim. These claims have been amended to include the limitations of the respective rejected base claims and thus should be in condition for allowance.

Conclusions

During the course of these remarks, Applicant has at times referred to particular limitations of the claims, which are not shown in the applied prior art. This short-hand approach to discussing the claims should not be construed to mean that the other claimed limitations are not part of the claimed invention. They are as required by law. Consequently, when interpreting the claims, each

of the claims should be construed as a whole, and patentability determined in light of this required claim construction.

If the Examiner has any questions or comments regarding this communication, he is invited to contact the undersigned to expedite the resolution of this application.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Derek V. Forinash', is written over a horizontal line.

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